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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,332	08/26/2003	Kentaro Tomioka	04329.3119	3534
22852	7590	11/15/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			PAPE, ZACHARY	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/647,332

Applicant(s)

TOMIOKA ET AL.

Examiner

Zachary M. Pape

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-22 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

- The following detailed action is in response to the correspondence filed 9/20/2005.
- Claims 1-2, 4-8 are rejected. Claims 9-22 are allowed.

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

"Liquid cooling system including liquid absorption and leak detection devices".

2. The examiner further recommends an addition to the abstract. The recommended added language is:

"The electronic apparatus further includes a leak detection system to alert the user of a fluid leak within the apparatus, and a liquid absorption means to absorb any leaking fluid".

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Larson et al. (US 5,383,340).

With respect to claim 1, Larson et al. teaches an electronic apparatus comprising: a housing (11) having a heat-generating component (12), a circulating path (comprising in part of 50) through which liquid coolant (Column 4, Line 32) for cooling the heat-generating component flows, the circulating path having a first connecting end (Tubing which 50 connects to as illustrated in Figs 3 and 5), a second connecting end (End of 50) connected to the first connecting end (As illustrated in Fig 5), and an outer wall (Comprising 26, 28, and the wall surrounding 36) surrounding the first connecting end (As illustrated in Fig 5 when 20 and 12 are connected), the second connecting end being interposed between the first connecting end and the outer wall (The second connector wraps around the first connector, thus placing it between the first connector and the outer wall); and a coolant-absorbent member (54) interposed between the second connecting end and the outer wall (28, as illustrated in Fig 5).

With respect to claim 2, Larson et al. teaches that the circulating path includes a heat-receiving portion (42a) which receives heat of the heat-generating component (Column 5, Lines 2-3), a heat-radiating portion (42b, 50) which radiates the heat of the heat-generating component, and a pump (Wick 54 acts as a pump as described by Larson in Column 4, Lines 66-68) which circulates the liquid coolant between the heat-receiving portion and the heat-radiating portion (Larson, Column 4 Line 66 – Column 5 Line 1).

With respect to claim 5, Larson et al. teaches a receptacle (42) provided between the first connecting end and the outer wall (28), and in which the first connecting end has an insertion port opening to the receptacle (Coolant flows from the tubing into the condenser (42) and for that reason, the first connecting end has an insertion port opening to the receptacle) and the second connecting end is inserted into the receptacle through the insertion port (The tubing connecting end could be inserted into the first connector thus the second connecting end is inserted into the receptacle through the insertion port).

With respect to claim 6, Larson et al. teaches that the member (54) swells upon absorbing the liquid coolant (The wick 54 will swell when absorbing liquid).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larson et al. in view of Becker (US 6,199,915).

With respect to claim 4, Larson et al. teaches the limitations expressed in claim 1 above and further teaches that the first connecting end has an outer circumferential surface which is surrounded by the second connecting end (Tube 50 could wrap around the first connector). Larson et al. fails to teach that a plurality of projections which

protrude from the outer circumferential surface. Becker teaches a connector (generally 1) with projections (6a, 7a) which protrude from the outer circumferential surface. It would have been obvious to one of ordinary skill in the connecting art at the time the invention was made to combine the connector of Becker with the electronic apparatus of Larson et al. to provide a reliable sealing, and displacement or damaging of the sealing element can be avoided (Becker, Column 1, Lines 45-50).

**Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larson et al. in view of Nielsen et al. (US 4,990,541).**

With respect to claim 7, Larson et al. teaches the limitations expressed in claim 6 above, but fails to teach that the member is made of rubber-like elastic material which contains a water-absorbent polymer. Nielsen et al. teaches the conventionality of using a rubber-like elastic material which contains a water-absorbent polymer (Column 6, Lines 55 – 63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Nielsen et al. with the electronic device of Larson et al. to provide a means of absorbing a large amount of water (liquid) in relation to the weight of the foam (Nielsen, Column 6, Lines 55-58).

**Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larson et al. in view of Florence et al. (US 6,776,421).**

With respect to claim 8, Larson et al. teaches the limitations expressed above in claim 5, but fails to teach that a seal closes the insertion port which covers the member.

Florence et al. teaches the conventionality of placing a seal (42) over a port opening (28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Florence et al. with the electronic device of Larson et al. to provide a means of sealing a port opening to prevent liquid from escaping from the port opening thus preventing liquid from escaping onto computer components causing damage to the electronic device.

***Allowable Subject Matter***

5. Claims 9-22 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 9, 17, 21 and the dependents therefrom, see the office action dated 6/14/2005 for the reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-2, 4-8 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 2005/0243510; US 2004/0105234 further teach leak absorption means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. & every other Fri. (8:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ZMP

  
**ANATOLY VORTMAN**  
**PRIMARY EXAMINER**